Two succulent mallows: Ceiba speciosa and Pseudobombax ellipticum

Two succulent mallows: *Ceiba speciosa* and *Pseudobombax ellipticum*

by Colin C. Walker

Introduction

The mallow family, the Malvaceae, consists of around 4,200 species in about 240 genera and has a worldwide distribution (Stevens, 2017). Previously, the succulents of this family were treated in two different families: the Bombacaceae and the Sterculiaceae. However, as a result of recent molecular studies the Malvaceae have been expanded to encompass these former separate families together with the Tiliaceae (non-succulent trees and shrubs). Consequently, the two succulents showcased here, *Ceiba speciosa* and *Pseudobombax ellipticum*, will be treated as members of the Malvaceae in the second revised edition of *The Illustrated Handbook of Succulent Plants* (Walker, 2021)

The most familiar representatives of this family are the garden plants *Hibiscus*, hollyhock *(Althaea)* and mallow *(Lavatera)*. By far the most economically important genus is cotton *(Gossypium)* followed by cocoa/chocolate *(Theobroma cacoa)*. The family occurs in most of the world, except for the very cold regions and is particularly abundant in tropical South America. Just a few, perhaps 35 species in total, have the pachycaul swollen habit of succulent bottle trees. Succulent mallow species occur naturally in central and South America, Africa, Madagascar and Australia. The baobabs of the genus *Adansonia* are the most famous of these but succulents also occur in the less familiar genera *Brachychiton*, *Cavanillesia*, *Ceiba*, *Megistostegium*, *Pseudobombax* and *Sterculia*. The genus *Megistostegium*, which is endemic to Madagascar, is unique in the family in that it exhibits leaf succulence. There are only three species in this genus, probably none of which are in cultivation (Walker, 2021).

Ceiba speciosa

Ceiba, Spanish for kapok, is a small genus of about 18 species which now includes those species formerly separated in the genus *Chorisia*. Only six species are considered to have swollen, pachycaul, prickly (aculeate) stems (Gibbs & Semir, 2003) currently of interest to succulent plant enthusiasts.

Three species of *Ceiba* occur in Mexico and Central America and 14 species are distributed in South America. *Ceiba pentandra* (non-succulent) is the only species which extends outside of South to Central America and the Caribbean islands, occurring in West Africa, where it is probably native and also in India, South East Asia and the Pacific, to which areas it was most likely introduced by humans (Gibbs & Semir, 2003). *Ceiba* is of economic importance as "Kapok" or "Silk-Cotton Tree", the source of kapok, a light-weight, water-resistant fibre used in pillows, etc.

Of the six pachycaul species only *C. speciosa* is widely grown in tropical or subtropical countries or those with Mediterranean-type climates. It is still most often encountered labelled *Chorisia speciosa*. In preliminary recent studies of this genus, *C. speciosa* was merged into *Ceiba insignis*. However, in the full revision, *C. speciosa* was again accepted as a distinct species whereas *C. insignis* was considered in a very narrow concept that includes trees that are not pachycaul succulents (Gibbs & Semir, 2003).

Ceiba speciosa has a very wide distribution in South America: West, North East and South East Brazil, northern Argentina, Paraguay, Bolivia, South and Central Peru. It occurs in dry semi-deciduous woodland, wet forest and humid river valleys. It is also widely cultivated in Argentina and Brazil as an ornamental.

The species grows as trees up to 20m tall with a spreading crown. The pachycaul trunk is immensely swollen, up to 2m diameter at the widest part (Fig. 1), generally covered with cone-like woody prickles (Fig. 2). Its leaves are digitate (hand-like) with 5 –7 leaflets. The flowers (Fig. 3) are relatively large, conspicuous and exceptionally very variable in petal colour, ranging from crimson or pink to yellow or white with chestnut-brown blotches in the throat.

Ceiba speciosa is a readily available and easily-grown pachycaul. In succulent plant collections this makes an attractive species with its prominently prickly pachycaul stem and spectacular flowers. It is frequently planted in parks and gardens in frost-free climates around the world for its interesting growth form and free-flowering nature. I do not know if this species is grown

Fig. 1. *Ceiba speciosa* in cultivation on Madeira with the author for scale. This old specimen has an exceptionally basally-swollen trunk.

Photo: Marjorie Thorburn.

Fig. 2. Close up of the stem prickles of *C. speciosa*.

Photo: John Trager.

Fig. 3. Flower of *C. speciosa* in cultivation at The Huntington Botanical Gardens, San Marino, California.

Photo: John Trager.

outdoors in New Zealand, so I would be grateful if readers could please feedback on this. De Vosjoli (2004) reports that "in warmer areas of the U.S., these impressive trees with green trunks and giant thorns make outstanding landscape specimens. Several forms exist, including a thornless dark pink-flowered form". These trees can also make "outstanding tropical bonsai specimens but require heat".

Pseudobombax ellipticum

Pseudobombax is another small American genus of about 30 species that until 1943 was included in Bombax, hence the name meaning "false *Bombax*". They are distributed in neotropical America from Mexico to northern Argentina, but two-thirds of the species occur in Brazil, forming a centre of diversity. The genus is more diverse in areas subject to a long dry season with xerophytic vegetation such as the caatinga of North East Brazil and the Venezuelan llanos (Carvalho-Sobrinho *et al*., 2016). Plants have deciduous foliage during the flowering season, an adaptation to bat pollination and their preference for habitats subject to a long dry season when the plants mostly flower.

Pseudobombax is characterised by trunks with often irregular greenish stripes, digitate leaves clustered at the branch apices, leaflets not jointed to the petiole (leaf stalk) and fruits that are woody capsules with abundant kapok (dense soft fibres) in which the seeds are embedded. Absence of woody stem prickles and leaflets not jointed to the petiole are considered to be key features of *Pseudobombax* (Carvalho-Sobrinho *et al*., 2016).

Pseudobombax ellipticum is widely distributed, naturalised and cultivated in central America and the Caribbean and is by far the most commonly encountered species in cultivation in Europe and the USA. It forms an attractive basally-swollen pachycaul with contrasting striped bark and large digitate leaves, particularly suitable for pot plant culture when young (Fig. 4), especially since it is readily available commercially. Specimens given bonsai treatment are particularly appealing. It can also be grown outdoors in warmer temperate zones, but with rapid growth the pachycaul stems of young specimens can quickly grow into non-pachycaul trees up to 10m tall (De Vosjoli, 2004).

Acknowledgements

Marjorie Thorburn, John Trager and Tina Wardhaugh are thanked for the use of their photos. My wife Marjorie read and commented on an earlier version of this article.

Fig. 4. *Pseudobombax ellipticum*. Photo: Tina Wardhaugh.

References

Carvalho-Sobrinho, J. G., Alverson, W. S., Alcantara, S., Queiroz, L. P., Mota, A. C., & Baum, D. A. (2016) Revisiting the phylogeny of Bombacoideae (Malvaceae): Novel relationships, morphologically cohesive clades, and a new tribal classification based on multilocus phylogenetic analyses. *Molec. Phyl. Evol.* **101**: 56–74.

De Vosjoli, P. (2004) *Pachyforms. A guide to growing pachycaul and caudiciform plants.* Advanced Visions Inc., Vista, California.

Gibbs, P. & Semir, J. (2003) A taxonomic revision of the genus *Ceiba* Mill. (Bombacaceae). *Anal. Jard. Bot. Madrid* **60**: 259–300.

Stevens, P. F. (2017, updated frequently) Angiosperm Phylogeny Website. http://www.mobot.org/MOBOT/research/APweb/

Walker, C. C. (2021) Malvaceae in U. Eggli & R. Nyffeler (eds.) *Illustrated Handbook of Succulent Plants*: *Dicotyledons*. 2nd Ed. Springer, Berlin, in press.

Colin C. Walker
c.walker702@btinternet.com